



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,827	08/15/2001	Dominik J. Schmidt		1388

24956 7590 01/30/2006

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.  
1800 DIAGONAL ROAD  
SUITE 370  
ALEXANDRIA, VA 22314

EXAMINER

GREY, CHRISTOPHER P

ART UNIT PAPER NUMBER

2667

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/930,827	Applicant(s) SCHMIDT, DOMINIK J.	
	Examiner Christopher P. Grey	Art Unit 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2005.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

1. Responsive to the amendments filed on August 5, 2005;
  - (a) Correction made to the specification have been entered as requested.
  - (b) Amendments to the Claims 1, 2, 5, 6, 7, 9, 15 and 16-20 have been entered as requested.
  - (c) The claims 8 and 10-14 have been canceled as requested.
  - (d) New claims 21-27 have been entered as requested.
  - (e) Amendments to the drawings have been entered as requested.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikkaswanny et al. (US 5625889) in view of Gustafsson et al (US 6597672)

Claim 1 Chikkaswanny et al. (Chikkaswanny 'hereinafter') discloses an RF signal detection circuit that detects available frequency channels (Col 1 line 64-Col 2 line 7) and an RF sniffer module (Col 2 lines 35-49).

Chikkaswanny also discloses utilizing idle (available) channels based on the detection that they are available (Col 1 lines 32-39).

Chikkaswanny discloses communication from a subscriber unit to a base station (Col 2 lines 8-35). However Chikkaswanny does not specifically disclose requesting an allocation of preferably adjacent cellular frequency channels from a mobile station to a base station.

Gustafsson et al. (Gustafsson 'hereinafter') discloses allocating adjacent channels in response to a request for a connection (Col 5 lines 23-37).

Gustafsson also discloses the BSC performing allocation of radio channels (Col 4 lines 60-64).

Art Unit: 2667

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the sniffer detection circuit as disclosed by Chikkaswanny, with the function of requesting adjacent channels as disclosed by Gustafsson. The motivation for this combination is to optimize the utilization of the capacity within the network (Col 2 lines 43-54).

Claim 2 Chikkaswanny discloses communicating over a voice channel (Col 2 lines 36-49), where it would have been obvious to one of the ordinary skill in the art at the time of the invention that a voice channel may be interpreted as a short range radio channel.

Claim 4 Chikkaswanny discloses detecting the presence of radio signals occurring in a channel, indicating whether the channel is available or active (Col 1 line 64- Col 2 line 7).

Claim 5 Chikkaswanny discloses a signal strength circuit for determining if a cellular channel becomes unavailable (Col 3 lines 22-42). However Chikkaswanny does not specifically disclose substituting the cellular channel with the short-range channel if the cellular channel becomes unavailable.

Gustafsson discloses moving (substituting) a connection when the signal on a channel is below a certain threshold, where it would have been obvious to one of the ordinary skill in the art at the time of the invention that a connection may be long range or short range. It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the RF sniffer disclosed by Chikkaswanny with the function of moving/changing a connection in

the event of breaching a threshold. The motivation for this combination is to maintain a signal above a certain threshold.

Claim 6 Chikkaswanny discloses a signal strength circuit for determining if a cellular channel becomes unavailable (Col 3 lines 22-42). However Chikkaswanny does not disclose substituting the short-range channel with the cellular channel if the short-range channel becomes unavailable.

Gustafsson discloses moving (substituting) a connection when the signal on a channel is below a certain threshold, where it would have been obvious to one of the ordinary skill in the art at the time of the invention that a connection may be long range or short range.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the RF sniffer disclosed by Chikkaswanny with the function of moving/changing a connection in the event of breaching a threshold. The motivation for this combination is to maintain a signal above a certain threshold.

Claim 7 Chikkaswanny discloses an RF sniffer module containing a voice signal detection circuit and diagnostic signal detection circuit (Col 2 lines 35-49) connected in parallel (see fig 4).

Claim 8 Chikkaswanny does not disclose sending a digital signal to a software controlled baseband circuit to select a wireless protocol. However Gustafsson discloses a BSC or equivalent unit (software baseband controller) that bases its operation from algorithms (such as that seen in Fig 6). Gustafsson

Art Unit: 2667

also discloses the BSC or equivalent unit determining (selecting) what connections are to be moved and to what terminals.

Therefore it would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the teachings of Chikkaswanny as previously discussed, with the functions of the BSC or equivalent unit as disclosed by Gustafsson. The motivation for this combination is to optimize the allocation of resources.

Claim 9 Chikkaswanny discloses detecting available channels. However Chikkaswanny does not disclose bonding the short-range channel with the cellular channel to increase bandwidth.

Gustafsson discloses after detecting idle channels, selecting preferably adjacent channels (Col 5 lines 23-37) for which there is an increase in bandwidth (Col 6 lines 30-35), where it would have been obvious to one of the ordinary skill in the art at the time of the invention that the channels selected could be cellular or short range channels.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the function of detecting available channels as disclosed by Chikkaswanny with the functions of selecting (bonding) channels as disclosed by Gustafsson in order to increase the bandwidth.

Claim 10 Chikkaswanny discloses the RF sniffer being tested under a number of different conditions/parameters where there is a range of different frequencies (Col 5 lines 4-27).

Art Unit: 2667

It would have been obvious to one of the ordinary skill in the art at the time of the invention for the cellular channel to comprise an uplink band around 890-915 MHz and downlink band around 935-960 MHz, since discovering the optimum or workable ranges involves only routine skill in the art.

Claim 11 Chikkaswanny does not disclose bonding over two adjacent channels.

Gustafsson discloses after detecting idle channels, selecting preferably adjacent channels (Col 5 lines 23-37) for which there is an increase in bandwidth (Col 6 lines 30-35).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the function of detecting available channels as disclosed by Chikkaswanny with the functions of selecting (bonding) channels as disclosed by Gustafsson in order to increase the bandwidth.

Claim 12 Chikkaswanny does not disclose each band being divided into 124 pairs of frequency duplex channels with 200 kHz carrier spacing using Frequency Division Multiple Access.

Gustafsson discloses dividing each band into a number of frequency duplex channels (Col 4 lines 13-28).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to divide each band into 124 pairs of frequency duplex channels with 200 kHz carrier spacing using Frequency Division Multiple Access, since it would have been held that discovering an optimum value of a result effective variable only involves routine skill in the art.



Art Unit: 2667

Claim 13 Chikkaswanny discloses the RF sniffer being operable in a TDMA environment (Col 5 line 66- Col 6 line 3). However Chikkaswanny does not disclose splitting the 200 kHz radio channel using time division multiple access, bonding the time slots and transmitting and receiving data in the bonded time slots.

Gustafsson discloses in a TDMA system splitting each carrier frequency into a number of time slots (Col 5 lines 6-13).

Gustafsson discloses making a multi frame (bonded time slots) consisting of a number of different time slots (Col 5 lines 6-13).

Gustafsson discloses channels carrying (transmitting and receiving) data (Col 5 lines 14-21).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the sniffer as disclosed by Chikkaswanny with the function of splitting a carrier frequency in a TDMA environment. The motivation for this combination is to achieve multislot connections having a desired bandwidth (Col 2 lines 42-44).

Claim 14 Chikkaswanny discloses the RF sniffer being operable in a TDMA environment (Col 5 line 66- Col 6 line 3). However Chikkaswanny does not disclose splitting the 200 kHz radio channel using time division multiple access.

Gustafsson discloses in a TDMA system splitting each carrier frequency into a number of time slots (Col 5 lines 6-13).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the sniffer as disclosed by Chikkaswanny with the

Art Unit: 2667

function of splitting a carrier frequency in a TDMA environment. The motivation for this combination is to achieve multislot connections having a desired bandwidth (Col 2 lines 42-44).

Claim 15 Chikkaswanny discloses transmitting cellular packet data conforming to a cellular digital packet data protocol (Col 1 lines 5-22 and Col 1 line 64-Col 2 line 7).

Claim 16 Chikkaswanny discloses an RF signal detection circuit (processing unit) that detects available frequency channels (Col 1 line 64- Col 2 line 7) and an RF sniffer module (Col 2 lines 35-49).

Chikkaswanny discloses transmitting a burst of cellular data over a frequency channel. Chikkaswanny does not specifically disclose a long range and short-range transceiver coupled to the processing unit for doing so.

Gustafsson discloses a BSC performing a number of functions including allocating radio frequency channels (Col 4 lines 60-67) and a control unit (processor) for selecting channels (Col 3 lines 30-34), where it would have been obvious to one of the ordinary skill in the art at the time of the invention that the channels allocated could be long range or short range.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the detection means and sniffer module as disclosed by Chikkaswanny with the BSC and control unit disclosed by Gustafsson. The motivation for this combination is to optimize the utilization of the capacity within the network (Col 2 lines 43-54).

Art Unit: 2667

Claim 17 Chikkaswanny discloses a number of different processors (filters, amplifiers, mixers and D/A converters) that operate on a digital signal (see fig 4).

Claim 18 Chikkaswanny does not specifically disclose an RISC, however it would have been obvious to one of the ordinary skill in the art at the time of the invention to implement an RISC in a computer environment as disclosed by Chikkaswanny to increase the speed of processing.

Claim 19 Chikkaswanny discloses an MSC (router) coupled to several base stations within which the processors are contained (see Fig 1).

Claim 20 Chikkaswanny discloses detecting available channels. However Chikkaswanny does not disclose bonding the short-range channel with the cellular channel to increase bandwidth.

Gustafsson discloses after detecting idle channels, selecting preferably adjacent channels (Col 5 lines 23-37) for which there is an increase in bandwidth (Col 6 lines 30-35); where it would have been obvious to one of the ordinary skill in the art at the time of the invention that the channels selected could be cellular or short range channels.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the function of detecting available channels as disclosed by Chikkaswanny with the functions of selecting (bonding) channels as disclosed by Gustaffson in order to increase the bandwidth.

Art Unit: 2667

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chikkaswanny et al. (US 5625889) in view of Gustafsson et al. (US 6597672) in further view of Cannon et al. (US 6650871)

Claim 3 The combined teachings of Chikkaswanny and Gustafsson do not specifically teach the short range channel being Bluetooth or WLAN, however Cannon et al. (Cannon 'hereinafter') discloses communication between a cordless telephone and a base unit over a Pico network (Bluetooth) channel (Col 3 lines 19-31).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the combined inventions of Chikkaswanny and Gustafsson with the communication in a Bluetooth environment as disclosed by Cannon. The motivation for this modification is to supply a short-range radio link and support point-to-point communications (Col 1 lines 26-32).

***Response to Arguments***

4. Applicant's arguments filed August 5, 2005 have been fully considered but they are not persuasive.

(a) The applicant argued that the cited art does not disclose the applicants claimed, "sniffing for available cellular frequency channels via a mobile station".

The examiner maintains that the same limitation in its broadest term has already been discussed in the rejection of claim 1, wherein Chikkaswanny discloses detecting for available frequency channels using an RF sniffer within an overlay system, where an overlay system may be in the form of components within a cellular system (Col 2 lines 8-35). It would have been obvious to one of the ordinary skill in the art at the time of the invention that any component within a cellular system may implement the sniffer detection.

(b) The applicant argued that the cited art does not disclose the applicants claimed, "short range radio channel".

The examiner maintains that the same limitation in its broadest term has already been discussed in the rejection of claim 1, wherein Chikkaswanny discloses sniffer detection within a cellular network. It would have been obvious to one of the ordinary skill in the art at the time of the invention that if detecting available frequency channels can be performed on long range channels within a cellular network, sniffer detection may also be used to detect available channels in short range channels in a short range environment.

Art Unit: 2667

(c) The applicant argued that the cited art does not disclose the applicants claimed, "substituting at least one allocated cellular channel with a short range radion channel of the cellular channel becomes unavailable".

The examiner maintains that the same limitation in its broadest term has already been discussed in the rejection of claim 1, wherein Chikkaswanny discloses detecting a signal strength, and determining from the result of detection whether or not a channel is available. Furthermore, Gustafsson discloses a control unit (Col 4 lines 30-34) for moving a connection from one channel to another in the event that it is determined necessary (Col 5 lines 23-37).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the result of an unavailable channel as disclosed by Chikkaswanny, to the control unit as disclosed by Gustafsson, for triggering moving a connection to an available channel, where an available channel may be that of short range or long range.

(d) The applicant argued that the cited art does not disclose the applicants claimed, "bonding a short-range channel and allocated cellular frequency channel".

The examiner maintains that the same limitation in its broadest term has already been discussed in the rejection of claim 1, wherein Gustafsson discloses a control unit (Col 4 lines 30-34) for moving a connection from one channel to another in the event that it is determined necessary (Col 5 lines 23-37). It is noted that the examiner interprets a short range channel in its broadest term to

Art Unit: 2667

mean a short range cellular channel, capable of short range communication, where almost any channel may constitute a short range channel.

(e) The applicant argued that the cited art does not disclose the applicants claimed, "a reconfigurable processor core including both a long range transceiver and a short range transceiver and a radio frequency sniffer".

The examiner maintains that the same limitation in its broadest term has already been discussed in the rejection of claim 1, wherein Gustafsson discloses allocating radio frequency channels (Col 4 lines 60-67) and a control unit (processor) for selecting channels (Col 3 lines 30-34), where it would have been obvious to one of the ordinary skill in the art at the time of the invention that the channels allocated could be long range or short range.

Art Unit: 2667

**5. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.



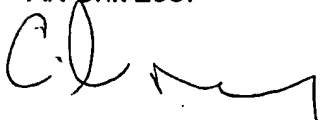
Art Unit: 2667


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Grey whose telephone number is (571)272-3160. The examiner can normally be reached on 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571)272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Grey  
Examiner  
Art Unit 2667

  
Oct 20, 2009

  
CHI PHAM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2667 10/26/09